Montana Department of
ENVIRONMENTAL QUALITY

Marc Racicot, Governor

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February 18, 2000

Judy McDonough
Burlington Northern and Santa Fe Railway
North town GOB
80 - 44th Ave. NE
Minneapolis, MN 55412

Subject: BN Mission Wye site

Dear Ms. McDonough:

Enclosed is the final DEQ Interim Action Memorandum Addendum for the BN Mission Wye site located east of Livingston, Montana. The document describes the selected treatment and disposal interim actions for the site.

Please call me if you have any questions.

Sincerely,

John Wadhams
Project Coordinator
BN Mission Wye site

Enclosure

cc: Dan Stremcha
Steve Wade
Park County Commissioners
Livingston Public Library
Montana State Library (4 copies of enclosure)

INTERIM ACTION MEMORANDUM
ADDENDUM

BURLINGTON NORTHERN
MISSION WYE
CECRA SITE

Montana Department of Environmental Quality

Superfund Program

February 3, 2000

Declaration of Interim Action Memorandum Addendum

Interim Treatment Selection

Site Name, Location and CERCLIS Number

Burlington Northern Mission Wye
Park County, Montana
CERCLIS Number: MTD 980635387

Statement of Purpose

This Interim Action Memorandum Addendum re-evaluates alternatives and selects an interim response action for this site in accordance with the Comprehensive Environmental Cleanup and Responsibility Act (CECRA), §§ 75-10-701 through 75-10-724 (1993), MCA, and the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 42 U.S.C.A. §§ 9601-9675 (1983 and 1998 Supplement), and not inconsistent with the National Contingency Plan, 40 CFR Part 300 (1998).

Statement of Basis

The basis for this decision is described in the Interim Action Memorandum and this Addendum. Documentation for this decision is also contained in the administrative record which was developed in accordance with § 75-10-713 of CECRA and which is available for public review at the information repositories located at the Livingston Public Library in Livingston, the Montana State University Library in Bozeman, Montana, the State Library in Helena and the Montana Department of Environmental Quality in Helena.

Assessment of the Site

Pursuant to § 75-10-711 (1993) of CECRA, the Department finds there has been a release or there is a substantial threat of a release of hazardous or deleterious substances into the environment at the Burlington Northern (BN) Mission Wye site that may present an imminent and substantial endangerment to public health, welfare, or safety or the environment.

Description of Treatment Selection

The selected treatment action for the source of groundwater contamination at the BN Mission Wye site consists of excavating waste and treating it on-site for appropriate off-site disposal. Asphalt-like substance (ALS) will be excavated, neutralized, processed and shipped off-site to a hazardous waste incinerator. Soil is being treated using soil vapor extraction (SVE) to remove contamination before it is shipped to the High Plains Sanitary Landfill in Great Falls. Rocks will

be cleaned to on-site remediation goals and backfilled on-site; rocks that do not meet on-site remediation goals will be shipped off-site. Debris, spent carbon and filter cake material will be sampled and shipped off-site to a hazardous waste incinerator or the High Plains Sanitary Landfill.

Declaration

The Department finds, pursuant to § 75-10-721, MCA, that the selected interim action, as part of a total remedial action, will attain a degree of cleanup of hazardous and deleterious substances and control of a threatened release or further release of those substances that assures present and future protection of public health, safety and welfare, and of the environment.

The Department finds that the selected interim action will be consistent with applicable or well-suited state and federal environmental requirements, criteria or limitations (ERCLs), is protective of public health, safety and welfare, and the environment, utilizes permanent solutions, utilizes alternative treatment technologies or resource recovery technologies to the maximum extent practicable, and is cost effective.

Mark A. Simonich — 2/15/00

Mark Simonich
DEQ Director

Date

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I INTRODUCTION AND PUBLIC PARTICIPATION

The purpose of this Addendum is to evaluate and document significant differences between original cleanup technologies selected in the Interim Action Memorandum (IAM) for the BN Mission Wye Superfund site and new cleanup remedies proposed in this Addendum to the IAM and to document the selection of alternatives that will be used to complete interim actions at Mission Wye. The IAM was issued by the Department of Environmental Quality (DEQ)[1] in December 1995. This Addendum relies and builds upon the IAM and focuses on the selection of alternatives considered.

Based on new information, certain alternatives presented in the IAM have been shown to be technically impracticable to implement. Therefore, this Addendum re-analyzes certain portions of the selected alternative. Section II of the Addendum provides a brief summary of the actions performed to date under the IAM. Section III sets forth revised remediation goals. Section IV of the Addendum evaluates the new proposed alternative against the criteria prescribed in the IAM. Section V sets forth the selected alternative. DEQ presented the draft IAM Addendum and draft work plan to the public on December 7, 1999 and held a public meeting on that date. DEQ advertised the public meeting and comment period in the Livingston Enterprise and Great Falls Tribune. A 30-day comment period was held from December 7, 1999 through January 7, 2000 to accept public comments on the draft IAM Addendum and draft work plan. DEQ has responded to public comments in Appendix B to this document and has modified activities described and detailed in the work plan accordingly. As with the IAM, information contained in this Addendum will become part of the Administrative Record. The Administrative Record is available for public review at the DEQ located at 2209 Phoenix Ave., Helena, Montana. A partial copy of the Administrative Record is available at the Livingston-Park County Public Library located at 228 W. Callender in Livingston, Montana.

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[1] Both the DEQ and BNSF have changed as entities over the last few years. The DEQ was created on July 1, 1995 by consolidating environmental programs from the Departments of Health and Environmental Sciences (DHES), Natural Resources and Conservation and State Lands. The investigations, treatability studies and related documents for the BN Mission Wye site were conducted under the authority of DHES. Documents in the Administrative Record dated before July 1, 1995 refer to DHES; documents in the Administrative Record dated after July 1, 1995 refer to DEQ. The Burlington Northern Railroad (BNRR) changed its name to the Burlington Northern and Santa Fe Railway Company (BNSF) as the result of a merger between the BNRR and the Atchison, Topeka & Santa Fe Railway Company in 1996. Documents in the Administrative Record dated before December 31, 1996 refer to BNRR; documents created after the December 31, 1996 merger refer to BNSF.

For purposes of clarity in this Addendum, the acronym DEQ will be used to refer to the existing Department of Environmental Quality and the former DHES. The acronym BNSF will be used to refer to the existing Burlington Northern and Santa Fe Railway Company and the former BNRR.

II SUMMARY OF PREVIOUS ACTIONS UNDER INTERIM ACTION MEMORANDUM

Primary contaminants detected in waste, soil and groundwater are tetrachloroethene (PCE), trichloroethene (TCE) and total petroleum hydrocarbons (TPH). Asphalt-like substance (ALS) contains TCE and TPH. Based on analytical reports, DEQ has identifed the majority of soil and all of the ALS as hazardous waste upon excavation.

Laboratory and field studies conducted in 1994 through 1996 showed thermal desorption could treat waste materials. Pursuant to the Modified Partial Consent Decree between DEQ and BNSF, excavation and thermal desorption of contaminated soil and clay waste commenced in September 1996. Approximately 2000 tons of contaminated soil and clay waste were processed using thermal desorption before the process was terminated. Treated waste material met remediation goals and was disposed of on-site and recovered oil was shipped off-site for recycling. Thermal desorption was discontinued in June 1997 due to safety, equipment, regulatory and scheduling problems. Safety problems included two workers being accidentally burned and other minor worker accidents. Equipment problems included failed metal surfaces due to high thermal stress, inappropriate particulate removal systems, plugged condensation piping and burner problems. Thermal desorption equipment problems resulted in emission control equipment failing to meet conditions and limitations established by DEQ for atmospheric discharges. Safety, equipment and regulatory compliance problems resulted in the decision to terminate thermal desorption in June 1997. The extended time period required to treat each batch of soil resulted in scheduling delays and was also a consideration in terminating the use of thermal desorption.

Upon termination of thermal desorption, BNSF proposed SVE treatment of remaining contaminated soil, which was a component of the original IAM alternative. Treated soil was shipped to a sanitary landfill. BNSF determined, through field and analytical testing, that contaminated soil could be treated to non-hazardous waste levels [below toxicity characteristic leaching procedure (TCLP) levels] using SVE. Soil was treated to below TCLP levels and disposed of at the High Plains Sanitary Landfill in Great Falls. However, DEQ discontinued soil SVE treatment and disposal in December 1997 when it learned BNSF had not complied with proper land disposal restrictions (LDRs) certification and notification requirements prior to disposal. BNSF has subsequently complied with the proper certification and notification requirements.

All contaminated soil, except for seep area soil, containing ALS and clay waste, has been excavated. ALS remains on the ground and is primarily confined to an area approximately zero to three feet deep covering about 1/4 acre. No remedial activity, except for SVE treatment of contaminated soil, has occurred at Mission Wye since December 1997.

III REMEDIATION GOALS

Table 4 identifies remediation goals for the site. Some of the remediation goals required revision due to new federal and state LDRs. With the exception of chlorobenzene (see footnote 4 in Table 4, p. 18), the addition of column 5, "Soil 1999 new LDR (mg/kg)" and the change made in column 6, row 6, the soil final remediation goal for trans-1,2-dichloroethene from 30 mg/kg to 5 mg/kg, remediation goals listed in Table 4 are equivalent to those listed in Table 9 of the IAM.

Under the selected alternative, only 1" to 2" and greater than 2" rocks meeting remediation goals will be disposed of on-site; all other excavated waste will be shipped off-site for disposal. Column 6 in Table 4, p. 18 identified as "Soil 1999 new LDR (mg/kg)" lists new remediation goals for SVE treated soil that will be disposed of in a sanitary landfill. Soil beneath excavated ALS and seep area soil contaminated with ALS will be sampled to determine if soil beneath these areas meet site remediation goals.

IV EVALUATION AND ASSESSMENT OF NEW DISPOSAL OPTIONS

This Addendum amends the Interim Action Memorandum dated December 8, 1995. Seven remaining waste streams require treatment and disposal. They are identified in Table 1, p. 15 and include: (1)ALS, (2) debris including rusted drums, (3) seep area soil mixed with ALS, (4) soil, (5) spent carbon, (6) rocks separated from ALS, debris and soil, and (7) filter cake from filtering oil recovered during thermal desorption. Several of these waste streams were not included in the 1995 IAM because certain waste streams were an unanticipated result of the processes set forth in the 1995 IAM. Many of the waste streams were studied during the RI/FS process or were previously treated so treatment and disposal options are well understood. The Detailed Analysis of Alternatives for Source Control Measures, Mission Wye, Montana (RETEC January 1993) lists some treatment options originally evaluated for the site. Modification and evaluation of treatment options for each waste stream is discussed below.

The IAM evaluated treatment and disposal options against three criteria: effectiveness, implementability and cost. The effectiveness criterion ensures that an alternative will protect public health and the environment. The implementability criterion measures both the technical and administrative feasibility of constructing and operating the interim source control measure. The cost criterion, based on 1992 present worth costs, is sometimes difficult to estimate with great accuracy because uncertainties, such as the exact volume of waste to be treated, associated with the cleanup often remain. All alternatives must ensure overall protection of public health and the environment and comply with ERCLs.

1) Soil: The selected remedy for soil treatment remains Alternative Number 12- Soil Vapor Extraction. As stated in the IAM, SVE is highly effective for treating volatile organic contaminant (VOCs) in permeable sands and gravel and is implementable at a low cost. Although SVE proved to be an effective technology and complies with ERCLs, it was determined not to be protective of human health and the environment because it did not provide soil treatment to a level which allowed soil to be returned to the site (due to the

proximity of groundwater). Treating soil using thermal desorption also proved not to be technically implementable. Therefore, DEQ proposes to modify Alternative Number 12 with the disposal component of Alternative Number 9—Excavation, Chemical Fixation, and Off-Site Landfill. Alternative Number 9—implemented without soil vapor extraction as listed in the IAM, did not comply with ERCLs since chemical fixation could not meet the more stringent LDRs. However, SVE, under Alternative Number 12, will meet LDRs specified in Table 4 (Remediation Goals) and allow soil to be shipped off-site for disposal.

Alternative Number 12 with off-site disposal, would contain and reduce the mobility and volume of source material and satisfy the statutory preference for reduction in toxicity and volume. Control or reduction of potential leaching from source material in contact with groundwater is provided by excavating the material, treating it to meet regulatory levels including LDRs and disposing of it in an appropriately-licensed landfill facility. This alternative would meet all remediation goals and cleanup requirements by treating and then permanently isolating the treated source material. The alternative would provide long-term effectiveness and permanence and reduce the toxicity, mobility and volume of the source material. LDRs, including underlying hazardous constituents (UHCs), would be met.

The cost to treat and dispose of 5,600 tons on contaminated soil is approximately $224,000. Overburden and additional clean soil would be replaced in the excavations. Adequate soil cover to support vegetation would be spread out over the clean soil and revegetated. No technical obstacles for implementation of this alternative are anticipated.

2) ALS: In the comparative analysis of alternatives in the 1995 IAM, Alternative Number 12 —Thermal Desorption, scored the highest (based on effectiveness, implementability and cost) and was selected as the remedy for the ALS. However, as documented in this IAM Addendum, the selected alternative for ALS, Alternative Number 12—Thermal Desorption, proved not to be technically implementable. Alternative Number 11—Excavation / Off-site Incineration, was the only alternative in the IAM to offer equal effectiveness and implementability, but at a higher cost. Therefore, DEQ proposes Alternative Number 11—Excavation / Off-site Incineration as the preferred alternative for the ALS. Alternative Number 9, is not effective on ALS because SVE cannot remove VOCs from the low-permeable material.

Alternative Number 11 specifies excavation of the source material and transportation to an off-site RCRA-permitted hazardous waste incinerator. Overburden and clean fill would be backfilled into the excavation. A soil cover would then be placed over the excavation and the area revegetated. The excavated material would be transported to Safety Kleen in Salt Lake City, Utah, a distance of about 560 miles. Approximately 1200 tons of ALS material would require at least 60 trips to Utah for a total of 33,600 loaded miles.

Alternative Number 11 controls exposure to source material through destruction of the organic compounds through incineration. Control or reduction of potential leaching from

source material in contact with groundwater is provided by excavating the material and subsequent thermal destruction. This alternative would meet all remediation goals and cleanup requirements by destroying the source material. Incineration would provide long-term effectiveness and permanence and reduce the toxicity, mobility and volume of the source material. LDRs would be met. No technical obstacles to implement this alternative are anticipated. The original estimated cost of $24,610,942, using 1992 present net worth costs, associated with this alternative is reduced to $520,800 by limiting incineration solely to ALS. Although the cost to incinerate ALS is high, this alternative is selected because no other technology will effectively treat ALS.

3) Debris including rusted drums: The treatment and disposal option for this waste stream remains as set forth in the IAM: dispose of debris off-site at either a hazardous waste facility or an industrial landfill depending on analytical results. The cost to dispose of debris at the High Plains Sanitary Landfill is about $12,000 compared to the cost to dispose of debris at a hazardous waste incinerator at about $240,000.

4) Seep area soil mixed with ALS: As with soil, the selected remedy in the 1995 IAM was SVE. Seep area soil will be excavated. Discrete areas of ALS material will be placed with other ALS material. SVE treatment will be performed on remaining soil. If excavated soil is above regulatory levels (TCLP), DEQ proposes treating soil using SVE with off-site disposal as the preferred alternative for soil, which is consistent with all other soil treatment. Should this soil test as non-hazardous waste (solid waste), DEQ proposes off-site disposal at a regulated solid waste facility, without treatment. This would be consistent with ERCLs. The estimated cost to treat seep area soil and dispose of seep area soil at the High Plains Sanitary Landfill is about $24,000. The estimated cost to dispose of it at the High Plains Sanitary Landfill without treatment is about $18,000.

5) Spent carbon: This waste source resulted from the thermal desorption process (by reducing air emissions). DEQ proposes this waste source be treated similar to the alternative for debris under the IAM. DEQ proposes spent carbon be disposed of off-site at either a hazardous waste incinerator or an industrial landfill or be regenerated, depending on analytical results of the spent carbon. Disposing of hazardous spent carbon at a hazardous waste incinerator and non-hazardous spent carbon at the High Plains Sanitary Landfill, or regenerating the carbon are effective and implementable disposal options at a reasonable cost and comply with ERCLs. The cost to dispose of all the spent carbon at a hazardous waste incinerator, regeneration facility or the High Plains Sanitary Landfill is $5,400, $2,700 and $270, respectively.

6) Filter cake: This waste resulted from the thermal desorption process (from filtering recovered oil). Filter cake above regulatory levels (TCLP) will be shipped to a hazardous waste incinerator because it cannot be treated using SVE due to the high oil and grease content (66%). Non-hazardous filter cake will be disposed of at the High Plains Sanitary Landfill. Disposing of filter cake at a hazardous waste incinerator or the High Plains Sanitary Landfill is protective of public health and the environment, cost-effective and

easily implemented. Shipping filter cake to a secure sanitary landfill or hazardous waste incinerator will meet all ERCLs for the site. The cost to dispose of filter cake at a hazardous waste incinerator is about $21,000. The cost to dispose of filter cake at the High Plains Sanitary Landfill is about $1,050.

7) Rocks separated from ALS, debris and soil: This waste resulted from the thermal desorption process (by removing rocks prior to thermal desorption). DEQ proposes treating rocks similar to debris under the IAM by decontaminating the rocks and placing them back in the excavation or disposing of the rocks in an appropriate off-site landfill. DEQ proposes high-pressure rock washing to meet remediation goals and disposal on-site. High-pressure rock washing is effective and technically implementable. The cost to wash rocks is approximately $16,000.

Tables 1 and 2 list four treatment and disposal options for the seven remaining waste streams. Sample constituents and sampling frequency for each waste stream are listed in Table 3.

V SELECTED ALTERNATIVE

ALS AND CLAY WASTE:

ALS and clay waste will be excavated and transported to a permitted hazardous waste incinerator. Oversized material (rocks greater than 2.0 inches) will be removed from ALS and decontaminated to on-site remediation goals. Soil samples will be obtained to demonstrate soil beneath ALS excavations meet on-site remediation goals. Clean fill and rocks will be placed in the ALS excavation, covered with topsoil and revegetated.

SPENT CARBON:

Hazardous spent carbon, which has been generated as a result of site activities, will also be disposed of at a permitted hazardous waste incinerator or regeneration facility. Non-hazardous spent carbon will be disposed of at the High Plains Sanitary Landfill in Great Falls.

CONTAMINATED SOIL:

Contaminated soil will be treated using SVE to non-hazardous and LDR levels before it is shipped to the High Plains Sanitary Landfill in Great Falls. Some previously-sampled excavations have been backfilled with clean rock. After sampling, the remaining excavations will be backfilled with clean material, covered with clean soil and revegetated.

SEEP AREA SOIL MIXED WITH ALS:

Seep area soil contains discrete blobs of ALS or clay waste up to three feet in diameter. Discrete blobs of ALS or clay waste will be removed from soil, placed with ALS waste and shipped to a hazardous waste facility. Soil beneath the excavated seep area soil will be sampled to determine

if it is necessary or cost-effective to remove residual contamination by installing an SVE system in this area. After ALS or clay-waste has been removed from seep area soil, the soil will be neutralized, excavated and processed. If the soil passes TCLP upon excavation, it will be sent to the landfill; if the soil fails TCLP it will be placed in the SVE system for treatment. SVE will treat soil to non-hazardous levels and LDR levels before it is shipped to the High Plains Sanitary Landfill near Great Falls

ROCKS:

High-pressure washing, which has been effectively used to clean rocks at Mission Wye, will clean rocks to on-site remediation goals. Although the rocks are not hazardous waste, they will be pressure washed to on-site remediation goals by using high-pressure steam and water sprays approved as alternative treatment technologies for hazardous debris (40 CFR Part 268.45, Table 1). This will reduce or eliminate the amount of contaminants that could leach into groundwater. Cleaned rocks will be used as fill or disposed of on-site. Wash water will be treated and discharged pursuant to the renewed MPDES permit. High-pressure washing has already cleaned a large volume of rocks to on-site remediation goals. High-pressure washing is an effective and implementable technology to clean rocks at a reasonable cost.

FILTER CAKE:

Filter cake was generated during site activities by filtering oil recovered from the thermal desorption units. Filter cake will be resampled; filter cake that passes TCLP will be disposed of at the High Plains Sanitary Landfill. Filter cake that fails TCLP will be disposed of at a hazardous waste incinerator because it cannot be treated using SVE due to the high oil and grease content (66%).

DEBRIS:

Debris that fails TCLP will be disposed of at a hazardous waste incinerator. Debris that passes TCLP will be disposed of at the High Plains Sanitary Landfill.

CONTRIBUTION TO REMEDIAL PERFORMANCE

The selected interim action, as part of a total remedial action, will attain a degree of cleanup of the hazardous and deleterious substances and control of a threatened release or further release of that substance that assures present and future protection of public health, safety and welfare, and of the environment.

This source control measure is consistent with the long-term remedy and will not preclude a final remedy. Source removal is the first step toward a permanent and long-term remedy.

Subsequent groundwater monitoring for a period of one to three years will be performed after source excavation and treatment. If groundwater treatment is necessary, the selected technology

will be specified in the record of decision (ROD). Institutional controls will also be specified in the ROD. Other long-term remedial actions such as containment or biological treatment may be considered.

ESTIMATED PROJECT COSTS

The estimated cost to ship treated soil to the Great Falls landfill is $248,000. The estimated cost to ship ALS to a hazardous waste incinerator is $520,800. Depending on sample results, shipping all the debris, spent carbon and filter cake to a hazardous waste incinerator would cost $266,400. Shipping debris, spent carbon and filter cake to the Great Falls landfill would cost about $13,320. The cost to wash rocks and dispose of them on-site is approximately $16,000.

If all the waste is shipped to a hazardous waste incinerator (excluding treated soil and rocks), the total estimated cost of the project would be $1,051,200. If all the waste is shipped to the Great Falls landfill (excluding ALS and rocks), the total estimated cost of the project would be $798,120.

ENVIRONMENTAL REQUIREMENTS, CRITERIA OR LIMITATIONS

The Identification and Description of Legal Requirements for the Burlington Northern Mission Wye CECRA Site (Appendix A) describe federal and state ERCLs. These ERCLs specify protective requirements for actions and activities described in this Interim Action Memorandum and forthcoming work plan for the excavation and treatment of waste material at Mission Wye.

SCHEDULE

The schedule is contained in the work plan. Work will commence upon signature of this Addendum and final approval of the work plan.

VI RECOMMENDATIONS

Pursuant to Paragraph 6.H. of the Modified Partial Consent Decree, Order and Judgment (Cause No. 88-141-H-CCL) between the Department of Health and Environmental Sciences and Burlington Northern Railroad entered in the United States District Court for the State of Montana on April 27, 1990, BNSF is requested to implement the approved work plan for excavation, treatment and final disposition of the source at the Mission Wye site in accordance with this Interim Removal Action Memorandum as amended by this Addendum.

After source excavation and treatment, groundwater monitoring will be conducted for a period of one to three years to determine if groundwater treatment is necessary. Considering the hydrogeological characteristics of the aquifer, it is expected that natural processes including attenuation, dispersion, dilution and degradation will occur once the source is excavated and treated and that groundwater remediation goals will be achieved. If groundwater remediation goals are not achieved through source removal, a groundwater remedy will be implemented, and specified in the ROD, until remediation goals are met.

The procedural portion of the Air Quality permit is waived if the substantive requirements of the permit will be met. The procedural portion of the Hazardous Waste permit is waived if the substantive requirements of the permit will be met.

VII REFERENCES

Interim Action Memorandum, Burlington Northern Railroad, Mission Wye CECRA site (DEQ December 8, 1995).

U.S. Environmental Protection Agency. Presumptive Remedies: Site Characterization and Technology Selection for CERCLA Sites With Volatile Organic Compounds In Soils. Directive: 9355.0-48FS. EPA 540-F-93-048. PB 93-963346. September 1993.

U.S. Environmental Protection Agency. User's Guide to the VOCs in Soils Presumptive Remedy. Directive: 9355.0-63FS. EPA 540/F-96/008. PB 96-963308. July 1996.

Vented Pile Pilot Test Work Plan, Mission Wye, Montana (RETEC May 14, 1997).

Work Plan For Interim Remedial Action At Mission Wye Site, Burlington Northern Railroad, Mission Wye, Montana (RETEC July 1996).

Work Plan for Interim Remedial Action at Mission Wye site, Cleanup of Remaining Waste Streams (ThermoRetec September 1999)

TABLE 1

TREATMENT OR DISPOSAL OPTIONS FOR MISSION WYE WASTE STREAMS

Waste Stream	Estimated Volume (tons)	Treatment or Disposal Option
1) ALS	1200	Ship to a hazardous waste incinerator.
2) Debris, including rusted drums	400	Sample according to Table 3. Debris that passes TCLP will be shipped to the High Plains Sanitary Landfill in Great Falls. Debris that fails TCLP will be shipped to a hazardous waste incinerator.
3) Seep area soil mixed with ALS	600	Excavate and place discrete areas of ALS with other ALS material. Discrete areas of ALS will be shipped to a hazardous waste facility. Untreated soil that passes TCLP upon excavation will be disposed of at the High Plains Sanitary Landfill. Treated soil must pass TCLP and LDRs before it is disposed of at the High Plains Sanitary Landfill.
4) Soil	5600	Perform SVE treatment to regulatory levels including LDR levels; ship treated soil to the High Plains Sanitary Landfill in Great Falls.
5) Spent carbon	9	Ship hazardous spent carbon to a hazardous waste incinerator or regeneration facility; ship non-hazardous spent carbon to the High Plains Sanitary Landfill in Great Falls or a regeneration facility.
6) Rocks separated from ALS, debris and soil	4000	See Table 2.
7) Filter cake from filtering oil recovered during thermal desorption	35	Filter cake that passes TCLP will be shipped to the High Plains Sanitary Landfill in Great Falls. Filter cake that fails TCLP will be shipped to a hazardous waste incinerator.

TABLE 2

TREATMENT AND DISPOSAL OPTIONS FOR ROCKS

Waste Stream	Estimated Volume (tons)	Treatment or Disposal Option
Greater than 2" rocks separated from soil and from ALS	1000	High-pressure wash. Handpick ALS, clay waste, debris and grossly contaminated rocks. Sample. Rocks that meet remediation goals will be disposed of on-site.
1"-2" rocks separated from soil	1000	High-pressure wash. Handpick to remove 90% of ALS, clay waste, debris and grossly contaminated rocks. Sample. Rocks that meet remediation goals will be disposed of on-site.
1"-2" rocks separated from ALS	1000	Sample. High-pressure wash. Handpick ALS, clay waste, debris and grossly contaminated rocks. Sample. Rocks that fail TCLP or LDRs will be disposed of at a hazardous waste incinerator. Rocks that pass TCLP will be disposed of at the High Plains Sanitary Landfill. Rocks that failed TCLP before treatment must pass TCLP and LDRs before disposed of at the High Plains Sanitary Landfill. An effort may be made to high-pressure wash rocks to remediation goals and dispose of on-site.

TABLE 3

SAMPLE METHODS, CONSTITUENTS AND FREQUENCY

Waste Stream	Sample Frequency	Constituents Sampled
ALS	No sampling necessary because material will be shipped off-site to a Subtitle C facility for destruction	
Debris including rusted drums	1 grab sample / 20 tons	TCLP VOCs, TCLP metals[2]
Soil	1 grab sample / 50 tons	TCLP VOCs for newly analyzed soil, total VOCs for treated soil for LDRs[3]; TCLP metals for 1st seven samples
1" to 2" rocks	1 grab sample / 200 tons	TCLP VOCs, TCLP metals, Total VOCs and TPH
TD spent carbon	1 grab sample/ton	TCLP VOCs, TCLP metals
Water treatment spent carbon	1 grab sample / ton	TCLP VOCs, TCLP metals
SVE spent carbon	1 grab sample / ton	TCLP VOCs, TCLP metals
Greater than 2" rocks	1 grab sample / 200 tons	Total VOCs on Table 4 and TPH
Filter cake	1 grab sample / 17 tons	TCLP VOCs, TCLP metals

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2 EPA Methods include 1311 for TCLP VOCs and metals (7000/6010 series), 8260 for VOCs and 418.1 for TPH.

3 Waste streams that fail TCLP for VOCs will be sampled for total VOCs for LDR determination. TCLP metals' analyses will be used to determine if LDRs are met for metals. Based on previous sample results, DEQ does not expect soil to fail TCLP for metals.

TABLE 4

REMEDIATION GOALS

CHEMICAL	Groundwater 1999 WQB-7 Standard (μg/L)	Groundwater MCL (μg/L)	1995 LDR (mg/kg)	Soil 1999 new LDR (mg/kg)	Soil Calculated Remediation Goal (mg/kg)	Soil and Rock Final Remediation Goal (mg/kg)
Chlorobenzene	100[4]	100	6	60	NA	6
1,2-Dichlorobenzene	600	600	6	60	306	6
1,4-Dichlorobenzene	75	75	6	60	38	6
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA
Cis-1,2-Dichloroethene	70	70	NA	NA	3	3
Trans-1,2-Dichloroethene	100	100	30	300	5	5
Tetrachloroethene	5	5	6	60	7	6
1,1,1-Trichloroethane	200	200	6	60	14	6
Trichloroethene	5	5	6	60	0.3	0.3
Total Petroleum Hydrocarbon (TPH)	NA	NA	NA	NA	NA	5000

[4] The standard for chlorobenzene changed from 20 μg/L in the 1995 version of Circular WQB-7 to 100 μg/L in the November 1998 version of Circular WQB-7 (DEQ November 1998).

APPENDIX A

ENVIRONMENTAL REQUIREMENTS, CRITERIA OR LIMITATIONS

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I INTRODUCTION

Remedial actions undertaken pursuant to the Montana Comprehensive Environmental Cleanup and Responsibility Act (CECRA), §§ 75-10-701 through 75-10-724, Montana Code Annotated (MCA), must "attain a degree of cleanup of the hazardous or deleterious substance and control of a threatened release or further release of that substance that assures present and future protection of public health, safety, and welfare and of the environment." Section 75-10-721(1), MCA. Additionally, the Montana Department of Environmental Quality (DEQ) "shall require cleanup consistent with applicable state or federal environmental requirements, criteria or limitations" and "shall consider and may require cleanup consistent with substantive state or federal environmental requirements, criteria, or limitations that are well suited to the site conditions. "Section 75-10-721(2)(a) and (b), MCA.[1]

"Applicable" requirements are those that by their terms meet the jurisdictional prerequisites and apply to a given action, item or characteristic at the site. "Well suited" requirements are those requirements that are not applicable, but address situations or problems sufficiently similar to those at the site that they are well suited for use at the site. Attainment of both "applicable" requirements and designated "well suited" requirements is equally mandatory under CECRA.

In this document, DEQ updates and revises the identified applicable and well suited state and federal environmental requirements for the interim action at the BN Mission Wye Site. The action will involve excavation and either on-site or off-site treatment of the substances at the site, followed by off-site disposal for all substances except decontaminated rocks. These actions are described in greater detail in the text of DEQ's Interim Action Memorandum and DEQ's Interim Action Memorandum Addendum.

Environmental requirements, criteria and limitations (ERCLs) are generally of three types: contaminant-specific, location-specific, and action-specific. Contaminant-specific requirements are those that establish an allowable level or concentration of a hazardous or deleterious substance in the environment or that prescribe a level or method of treatment for a hazardous or deleterious substance. Action-specific requirements are those that are triggered by the performance of a certain activity as part of a particular remedy. Location-specific requirements are those that serve as restrictions on the concentration of a hazardous or deleterious substance or the conduct of activities solely because they are in specific locations or affect specified types of areas.

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1 When CECRA Section 75-10-721 was amended during the 1995 legislative session, on of the revisions pertained to the development and selection of ERCLs. *See* Chapter 584, Laws of Montana, 1995. However, Section 15 of Chapter 584 states that the 1995 revisions and amendments do not apply to civil actions commenced or begun prior to the effective date of the 1995 act [May 1, 1995] or to claims based on those actions.

The complaint in State of Montana v. Burlington Northern, Inc., Burlington Northern Railroad Company and Glacier Park Company CV 88-141-H-CCL was filed December 27, 1988 and pertains to the Burlington Northern Livingston Railyard Site, Mission Wye site and other Burlington Northern facilities. Therefore, these ERCLs comply with CECRA as amended in 1993, rather than CECRA as amended by Chapter 584, Laws of Montana, 1995. The 1997 and 1999 Montana legislatures did not alter the role of ERCLs.

In the analysis below, federal and state contaminant-specific and action-specific requirements are presented together, because they present similar and overlapping requirements. Because the site is not located within a floodplain or any known fault, and because actions at the site should not affect any wetlands, fish, wildlife, endangered species, or cultural resources, no location specific requirements are specified for this site.

The standards for off-site disposal are not ERCLs, but are instead independently applicable laws. For off-site actions, all standards, both substantive and procedural must be met. Under CECRA, neither permit exemptions nor waivers are allowed under the law for off-site actions. The "Other Laws" section at the end of the ERCLs lists certain of the laws which must be complied with for off-site disposal. However, the list is not exclusive. Off-site disposal will be coordinated with the pertinent regulatory bureaus at DEQ.

The description of applicable and well-suited federal and state requirements which follows includes summaries of the legal requirements which attempt to set out the requirement in a reasonably concise fashion that is useful in evaluating compliance with the requirement. These descriptions are provided to allow the user a basic indication of the requirement without having to refer constantly back to the statute or regulation itself. However, in the event of any inconsistency between the law itself and the summaries provided in this document, the actual requirement is ultimately the requirement as set out in the law, rather than any paraphrase of the law provided here.

In addition, the applicable and well-suited federal and state requirements set forth in this document are based on the treatment processes described in the Interim Action Memorandum and Interim Action Memorandum Addendum. Further requirements may be imposed based on actual field equipment or conditions.

II CONTAMINANT AND ACTION SPECIFIC REQUIREMENTS

A. WATER QUALITY

The Mission Wye Site is not located near any surface waters of the state. Consequently, no surface water requirements are specified for this site. All water used in treatment processes, such as water used for decontamination, will be treated and discharged on-site in accordance with an approved MPDES permit (see Appendix C).

The activities contemplated in this interim action do not include direct remediation of groundwater at the site. Since this is only an interim action, the determination of any groundwater remedy will be made at a later date. However, a discussion of the contaminant-specific groundwater requirements is included here since the remediation goals are based in part on the achievement of groundwater standards and so that this action can be conducted with eventual attainment of these standards in mind. In addition, the interim action must also comply with the action-specific water quality requirements listed below.

1. Groundwater

a) Maximum Contaminant Levels (MCLs) and Maximum Contaminant Level Goals (MCLGs) (Well Suited)

Because the aquifer affected by the site is currently and may in the future be used as a drinking water source, the MCLs and non-zero MCLGs specified in 40 CFR Part 141 (Primary Drinking Water Standards) are well suited requirements which are ultimately to be attained by the remedy for the site. See, e.g., 40 CFR §§ 141.61 and 141.62.

b) Montana Groundwater Pollution Control System (Applicable)

ARM 17.30.1006 classifies groundwater into Classes I through IV based upon its specific conductance and establishes the groundwater quality standards applicable with respect to each groundwater classification.

Based upon its specific conductance, the groundwater at the site must meet the standards for Class I groundwater. These standards are applicable. Concentrations of substances in Class I may not exceed the human health standards for groundwater listed in department Circular WQB-7.[2] For the primary contaminants of concern, the water quality standards are listed below.

Chemical	WQB-7(µg/L)	MCL (µg/L)
Chlorobenzene	100.0	100.0
1,2-Dichlorobenzene	600.0	600.0
1,4-Dichlorobenzene	75.0	75.0
cis-1,2-Dichloroethene	70.0	70.0
trans-1,2-Dichloroethene	100.0	100.0
Tetrachloroethene	5.0	5.0
1,1,1-Trichloroethane	200.0	200.0
Trichloroethene	5.0	5.0

B. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) AND THE MONTANA POLLUTANT DISCHARGE ELIMINATION SYSTEM (MPDES)(INDEPENDENTLY APPLICABLE)

1. Substantive MPDES Permit Requirements (Applicable)

The interim action must receive and comply with the pertinent MPDES permit. All requirements, including the requirement to properly operate and maintain all facilities and systems of treatment

2 Montana Department of Environmental Quality, Planning, Prevention and Assistance Division, Circular WQB-7, Montana Numeric Water Quality Standards (September 1999).

and control are independently applicable requirements. All water used in treatment processes must be treated and discharged pursuant to this permit.

2. Causing of Pollution (Applicable)

Section 75-5-605, MCA of the Montana Water Quality Act prohibits the causing of pollution of any state waters. Section 75-5-103(21)(a)(i) defines pollution as contamination or other alteration of physical, chemical, or biological properties of state waters which exceeds that permitted by the water quality standards.

3. Placement of Wastes (Applicable)

Section 75-5-605, MCA states that it is unlawful to place or cause to be placed any wastes where they will cause pollution of any state waters. Any permitted placement of waste is not placement if the agency's permitting authority contains provisions for review of the placement of materials to ensure it will not cause pollution to state waters.

4. Nondegradation (Applicable)

Section 75-5-303, MCA states that existing uses of state waters and the level of water quality necessary to protect the uses must be maintained and protected.[3]

ARM 17.30.705 provides that for any surface water, existing and anticipated uses and the water quality necessary to protect these uses must be maintained and protected unless degradation is allowed under the nondegradation rules at ARM 17.30.708.

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3 Pursuant to MCA 75-5-317, the following sources of pollution are considered nonsignificant activities, and not subject to the nondegradation rules promulgated pursuant to 75-5-303:

1) existing activities (as of April 29, 1993) that are non-point sources of pollution;

2) activities that are non-point sources after April 29, 1993 when reasonable land, soil and water conservation is applied and existing and anticipated uses will be fully protected;

3) changes in existing water quality resulting from an emergency or remedial activity that is designed to protect the public health or the environment and is approved, authorized, or required by the department;

4) the use of fluids, sealants, additives, disinfectants, and rehabilitation chemicals in water well or monitoring well drilling, development, or abandonment, if used according to department-approved water quality protection practices and if no discharge to surface water will occur;

5) discharges of water to groundwater from water well or monitoring tests, hydrostatic pressure and leakage tests conducted in accordance with department-approved practices;

6) stream-related construction projects or stream enhancement projects that result in temporary changes but do not result in long-term detrimental effects and have been authorized pursuant to 75-5-318, MCA.

7) any other activity that is nonsignificant because of its low potential for harm to human health and the environment in conformance with the new criteria required to be established in 301(5)(c).

Although a number of the exemptions refer to nonpoint sources, it is important to note that the definition of point source is quite expansive. The term point source is defined to include any discernable, confined, and discrete conveyance from which pollutants are or may be discharged. 33 USC § 1362(14). Therefore, exemptions for nonpoint sources should not affect the implementation of the nondegradation rules to remedial actions to any large extent.

ARM 17.30.1011 provides that any groundwater whose existing quality is higher than the standard for its classification must be maintained at that high quality unless degradation may be allowed under the principles established in § 75-5-303, MCA, and the nondegradation rules at ARM Title 17, chapter 30, subchapter 7.

III WASTE MANAGEMENT

A. FEDERAL AND STATE HAZARDOUS WASTE MANAGEMENT REGULATIONS (APPLICABLE)

The Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901 et seq., and the Montana Hazardous Waste Act, §§ 75-10-401 et seq., MCA, and regulations under these acts establish a regulatory structure for the generation, transportation, treatment, storage and disposal of hazardous wastes. These requirements are applicable to substances and actions at the site which involve hazardous wastes.[4] This includes, but is not limited to, excavation, storage, treatment, decontamination, and transportation. These requirements apply to all remaining contaminated substances at the site. Below are hazardous waste regulations which apply to the generation, transportation, treatment, and storage of hazardous wastes. Disposal of hazardous waste and decharacterized waste (except for certain rocks) will occur off-site; the regulations for off-site disposal of hazardous wastes and off-site disposal of decharacterized wastes is independently applicable and may not be waived or modified. The standards listed below are the federal and state standards.

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4 Hazardous Waste Regulations (Applicable):

The Montana Hazardous Waste Act, §§ 75-10-401 et seq., MCA, and regulations under this act establishes a regulatory structure for the generation, transportation, treatment, storage and disposal of hazardous wastes. These requirements are applicable to substances and actions at the site which involve listed and characteristic hazardous wastes.

ARM 17.54.302-352, substantially equivalent to RCRA regulations at 40 CFR Part 261, establish standards for the identification and listing of hazardous wastes, including standards for recyclable materials and standards for empty containers.

ARM 17.54.401-440, substantially equivalent to RCRA regulations at 40 CFR Part 262, establish standards that apply to generators of hazardous waste, including standards pertaining to the accumulation of hazardous wastes.

ARM 17.54.501-528, substantially equivalent to RCRA regulations at 40 CFR Part 263, establish standards that apply to transporters of hazardous waste.

ARM 17.54.702 incorporates by reference the regulations at 40 CFR 264, Subparts B through BB, except 40 CFR 264, subpart H (financial requirements) and 264.75 (biennial reports). (All incorporations by reference are to the July 1, 1998 version of the CFR.) These regulations contain general facility standards, preparedness and prevention standards, contingency plan and emergency procedure standards, standards for releases from solid waste management units, closure and post-closure requirements, standards for the use and management of containers, and standards for tank systems, surface impoundments, waste piles, landfills, and miscellaneous units. Hazardous waste air emission standards are contained in subparts AA and BB.

ARM 17.54.150 incorporates by reference the regulations at 40 CFR 268 pertaining to land disposal.

Section 75-10-422 MCA prohibits the unlawful disposal of hazardous wastes.

ARM 17.54.101-155 (including 17.54.111, Conditions of Permits) are substantially equivalent to RCRA regulations at 40 CFR Part 270, which establish standards for permitted facilities.

1. Identification and Listing of Hazardous Waste

Wastes may be designated as hazardous by either of two methods: listing or demonstration of a hazardous characteristic. Listed wastes are the specific types of wastes determined by EPA to be hazardous as identified in 40 CFR Part 261, Subpart D (40 CFR §§ 261.30 - 261.33). Listed wastes are designated hazardous by virtue of their origin or source, and must be managed as hazardous wastes regardless of the concentration of hazardous constituents. Characteristic wastes are those that by virtue of concentrations of hazardous constituents demonstrate the characteristic of ignitability, corrosivity, reactivity or toxicity, as described at 40 CFR Part 261, Subpart C. The wastes at the site demonstrate the characteristic of toxicity, and are therefore characteristic hazardous wastes. Because of the presence of characteristic hazardous waste, the substantive portion of the permit requirements specified in ARM 17.54.106 must be met.

Set out below are the hazardous waste requirements that are applicable for the types of waste management units or the waste management practices anticipated in the interim action.

2. Standards for Transporters of Hazardous Waste

The Resource Conservation and Recovery Act (RCRA) regulations at 40 CFR Part 263, establish standards that apply to transporters of hazardous waste. These standards include requirements for immediate action for hazardous waste discharges. These standards are applicable for any on-site transportation. These standards are independently applicable for any off-site transportation.

3. Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (40 CFR Part 264)

a) General Facility Standards

The regulations at 40 CFR 264, Subpart B, establish general facility requirements. These standards include requirements for general waste analysis, security and location standards.

b) Releases from Solid Waste Management Units

The regulations at 40 CFR 264, Subpart F, establish requirements for groundwater protection for RCRA-regulated solid waste management units (i.e., waste piles, surface impoundments, land treatment units, and landfills). The regulations at Subpart F establish monitoring requirements for RCRA-regulated solid waste management units (i.e., waste piles, surface impoundments, land treatment units, and landfills). Subpart F provides for three general types of groundwater monitoring: detection monitoring (40 CFR § 264.98); compliance monitoring (40 CFR § 264.99); and corrective action monitoring (40 CFR § 264.100). Monitoring wells must be cased according to § 264.97(c).

Monitoring is required during the active life of a hazardous waste management unit. If hazardous waste remains, monitoring is required for a period necessary to protect human health and the environment.

c) Waste Containers and Tanks

40 CFR Part 264, Subparts I and J apply to owners and operators of facilities that store hazardous waste in containers, store or treat hazardous waste in tanks, respectively. These regulations are applicable to any storage or treatment in these units at the site. The related provisions of 40 CFR 261.7, residues of hazardous waste in empty containers, are also applicable.

d) Waste Piles

40 CFR Part 264, Subpart L, applies to owners and operators of facilities that store or treat hazardous waste in piles. The regulations include requirements for the use of run-on and run-off control systems and collection and holding systems to prevent the release of contaminants from waste piles. These regulations are applicable to any storage or treatment in waste piles at the site including the operation of the soil vapor extraction unit.

4. RCRA Land Disposal Restrictions

Since the majority of the wastes to be treated are characteristic wastes, the RCRA Land Disposal Restrictions (LDRs) treatment levels set forth in 40 CFR Part 268 are applicable requirements, including underlying hazardous constituents. LDRs apply both to hazardous waste and decharacterized waste.

Land disposal restrictions typically set concentration levels or treatment standards that hazardous wastes must meet before they can be land disposed. These treatment standards typically represent best demonstrated available treatment technology (BDAT) for hazardous wastes. Any treatment technology may be used if it will achieve the specified concentration levels and is not otherwise prohibited.

For the primary contaminants of concern the LDRs levels for characteristic wastes set forth in 40 CFR 268.48 are set forth below. However, LDRs for all constituents, including underlying hazardous constituents (UHCs), must be met.

Chemical	LDRs Treatment Standard (mg/kg)
Chlorobenzene	6.0
1,2-Dichlorobenzene	6.0
1,4-Dichlorobenzene	6.0
trans-1,2-Dichloroethene	30.0
Tetrachloroethene	6.0
1,1,1-Trichloroethane	6.0
Trichloroethene	6.0

5. Alternative LDR Treatment Standards for Contaminated Soil

40 CFR 268 allows contaminated soils that are hazardous wastes to meet alternative LDR treatment standards rather than the Universal Treatment Standards specified in 40 CFR 268.48. 40 CFR 268.2 [63 Fed. Reg. 28556 (May 26, 1998)], defines soil to include unconsolidated earth material.)].[5] For those rocks on-site that are 60 mm or smaller, these standards are applicable.

5 The federal standards were adopted by the State of Montana during the public comment period on this Addendum. As stated

For all other substances (all of which will be treated and disposed of off-site), these standards are independently applicable. Pursuant to 40 CFR 268.49, when treatment of any constituent subject to treatment to a 90 percent reduction standard would result in a concentration less than 10 times the Universal Treatment Standard for that constituent, treatment to achieve constituent concentrations less than the Universal Treatment Standard are not required. Also, the remediated soil must be treated to be no longer characteristic. For the primary contaminants of concern the LDRs levels for 60 mm or less remediated rocks are set forth below. However, LDRs for all constituents, including UHCs, must be met.

Chemical	LDR Treatment Standard (mg/kg)
Chlorobenzene	60.0
1,2-Dichlorobenzene	60.0
1,4-Dichlorobenzene	60.0
trans-1,2-Dichloroethene	300.0
Tetrachloroethene	60.0
1,1,1-Trichloroethane	60.0
Trichloroethene	60.0

6. Treatment of Hazardous Debris

Pursuant to 40 CFR 268.45, Hazardous Debris must be treated pursuant to 261.3(f)(2) or one of the waste-specific treatment standards provided in Table 1 of 40 CFR 268.45 for hazardous debris. For those rocks on-site that are greater than 60 mm, these standards are applicable. For all other debris (all of which will be treated and disposed of off-site), these standards are independently applicable.

7. Substantive Permit Requirements

40 CFR Part 270 sets forth the hazardous waste permit program. The substantive requirements set forth in 40 CFR Part 270, Subpart C (permit conditions), including the requirement to properly operate and maintain all facilities and systems of treatment and control are applicable requirements.

8. Transportation of Solid Waste

For solid wastes, § 75-10-212 prohibits dumping or leaving any debris or refuse upon or within 200 yards of any highway, road, street, or alley of the State or other public property, or on privately owned property where hunting, fishing, or other recreation is permitted.

ARM 17.50.523 requires that such waste must be transported in such a manner as to prevent its discharge, dumping, spilling, or leaking from the transport vehicle.

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in footnote no. 2, ARM 17.54.150 incorporates by reference the regulations at 40 CFR 268 pertaining to land disposal. This includes alternative LDRs treatment standards for contaminated soils.

IV AIR QUALITY

The standards set forth below are applicable to the remedy.

A. AMBIENT AIR QUALITY STANDARDS (APPLICABLE)

Under the federal Clean Air Act, 42 U.S.C. §§ 7401-7671q, the Administrator of the EPA is authorized and directed to promulgate national ambient air quality standards for specific air pollutants. See 42 U.S.C. § 7409. States are required to develop plans to implement, maintain and enforce such standards in their jurisdictions. 42 U.S.C. § 7410. Montana has adopted ambient air quality standards in ARM 17.8.201 et seq. The State standards are enforceable under State law and, to the extent the State standards are equivalent to the federal standards and are part of the EPA-approved State Implementation Plan, the State standards are also federally enforceable.

The following ambient air quality standards are applicable for any of the following that may be emitted at the site:

ARM 17.8.213. Ambient air quality standard for ozone. No person shall cause or contribute to concentrations of ozone in the ambient air exceeding: 0.10 ppm 1-hour average.

ARM 17.8.220. Ambient air quality standard for settled particulate matter. Particulate matter concentrations in the ambient air shall not exceed the following 30-day average: 10 grams per square meter.

ARM 17.8.223. Ambient air quality standards for PM-10. PM-10 concentrations in the ambient air shall not exceed the following standards: 150 micrograms/cubic meter of air, 24-hour average; and 50 micrograms/cubic meter of air, expected annual average.

Each of the ambient air quality standards set forth above includes in its terms specific requirements and methodologies for monitoring and determining levels. Such requirements are also applicable requirements. In addition, ARM 17.8.205 and 17.8.206, Ambient Air Monitoring; Methods and Data, respectively (Applicable), require that all ambient air monitoring, sampling and data collection, recording, analysis and transmittal shall be in compliance with the Montana Quality Assurance Manual except when more stringent requirements are determined by DEQ to be necessary.

B. EMISSION STANDARDS (APPLICABLE)

Montana has promulgated standards to regulate emissions of certain contaminants into the air. See ARM 17.8.308 et seq. The state emission standards are enforceable under the Montana Clean Air Act, §§ 75-2-101 et seq., MCA.

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6 The ambient standards for lead and PM-10 (ARM §§ 17.8.222 and 223) are enforceable under both State and federal law. The ambient standards for ozone and settled particulate matter (ARM §§ 17.8.213 and 220) are enforceable under State law.

The following air emission standards are applicable at the site:

ARM 17.8.308. Airborne Particulate Matter. Emissions of airborne particulate matter from any stationary source shall not exhibit an opacity of 20 percent or greater, averaged over six consecutive minutes. This standard applies to the production, handling, transportation, or storage of any material; to the use of streets, roads, or parking lots; and to construction or demolition projects.

ARM 17.8.304. Visible Air Contaminants. No source may discharge emissions into the atmosphere that exhibit an opacity of 20 percent or greater, averaged over six consecutive minutes. This standard is limited to point sources, but excludes wood waste burners, incinerators, and motor vehicles.

ARM 17.8.315. Odors. If a business or other activity will create odors, those odors must be controlled, and no business or activity may cause a public nuisance.

ARM 17.8.604 lists certain wastes that may not be disposed of by open burning, including oil or petroleum products, RCRA hazardous wastes, chemicals, and treated lumber and timbers. Any waste which is moved from the premises where it was generated and any trade waste (material resulting from construction or operation of any business, trade, industry or demolition project) may be open burned only in accordance with the substantive requirements of 17.8.611 or 612.

C. STATE AIR QUALITY PERMIT REQUIREMENTS (APPLICABLE)

The department shall require such equipment, controls or procedures to provide reduction of air pollutants at least equivalent to reductions achieved through the best available control technology.

In addition, the permit requirements of ARM Title 17, Chapter 8, Subchapter 7, provide additional criteria and conditions applicable to issuance of an air quality permit, as discussed below.

ARM 17.8.705 requires that permits be obtained for the construction, installation, alteration, or use of specified air contaminant sources. This requirement is applicable. Although the Department has determined a waiver of the permit is appropriate pursuant to MCA 75-10-721(3), all substantive requirements of the permit must be observed.

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7 " 'Open burning' means combustion of any material directly in the open air without a receptacle, or in a receptacle other than a furnace, multiple chambered incinerator or wood waste burner . . ." ARM 17.8.601(5).

V OTHER LAWS

These laws are laws which are independently applicable rather than ERCLs for the site.

A. SURFACE WATER AND GROUNDWATER ACT, 85-2-101 *ET. SEQ.* MCA

Section 85-2-101, MCA, declares that all waters within the state are the state's property, and may be appropriated for beneficial uses. The wise use of water resources is encouraged for the maximum benefit to the people and with minimum degradation of natural aquatic ecosystems.

B. GROUNDWATER AND SURFACE WATER APPROPRIATION

Parts 3 and 4 of Title 85, Chapter 2, MCA, set out requirements for obtaining water rights and appropriating and utilizing water. All requirements of these parts are laws which must be complied with in any action using or affecting waters of the state.

C. GROUNDWATER

Section 85-2-505, MCA, precludes the wasting of groundwater. Any well producing waters that contaminate other waters must be plugged or capped, and wells must be constructed and maintained so as to prevent waste, contamination, or pollution of groundwater.

Section 85-2-516, MCA, states that within 60 days after any well is completed a well log report must be filed by the driller with the DNRC and the appropriate county clerk and recorder.

D. CONTROLLED GROUND WATER AREA

Pursuant to section 85-2-507 MCA, the Department of Natural Resources and Conservation may grant either a permanent or a temporary controlled ground water area. The maximum allowable time for a temporary area is four years.[8]

Pursuant to 85-2-506 MCA, designation of a controlled groundwater area may be proposed if i) excessive groundwater withdrawals would cause contaminant migration; ii) groundwater withdrawals adversely affecting groundwater quality within the groundwater area are occurring or are likely to occur; iii) groundwater quality within the groundwater area is not suited for a specific beneficial use.

1. Occupational Safety And Health Act

The federal Occupational Safety and Health Act regulations found at 29 CFR § 1910 are applicable to worker protection during conduct of RI/FS or remedial activities.

2. Occupational Health Act, §§ 50-70-101 *et seq.*, MCA.

ARM § 17.74.101, along with the similar federal standard in 29 CFR § 1910.95, addresses occupational noise.

ARM § 17.74.102, along with the similar federal standard in 29 CFR § 1910.1000 addresses occupational air contaminants.

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8 If a temporary controlled ground water area is granted, the statute requires DNRC to commence studies to determine the designation or modification of a permanent controlled ground water area.

3. Montana Safety Act

Sections 50-71-201, 202 and 203, MCA, state that every employer must provide and maintain a safe place of employment, provide and require use of safety devices and safeguards, and ensure that operations and processes are reasonably adequate to render the place of employment safe.

4. Employee and Community Hazardous Chemical Information Act

Sections 50-78-201, 202, and 204, MCA, state that each employer must post notice of employee rights, maintain at the work place a list of chemical names of each chemical in the work place, and indicate the work area where the chemical is stored or used. Employees must be informed of the chemicals at the work place and trained in the proper handling of the chemicals.

5. Transportation of Hazardous Wastes or Materials

E. Standards for Generators of Hazardous Waste

The RCRA regulations at 40 CFR Part 262, establish standards that apply to generators of hazardous waste. These standards include requirements for obtaining an EPA identification number and maintaining certain records and filing certain reports. These standards are applicable for any waste which will transported off-site. 40 CFR 268 also contains notification requirements.

1. Standards for Transporters of Hazardous Waste

The RCRA regulations at 40 CFR Part 263, establish standards that apply to transporters of hazardous waste. These standards include requirements for immediate action for hazardous waste discharges. These standards are applicable for any off-site transportation.

VI PERMIT REQUIREMENTS

The remedy will involve discharge of treated waste water from the remediation pursuant to the renewed Montana Groundwater Pollution Control System (MGWPCS General Permit no. 1003). The MGWPCS General Permit requirements are independently applicable. In addition, the groundwater standards listed in the above groundwater section must also be met.

There are presently no Air Quality or Waste Management permits for this action. MCA § 75-10-721(3) gives the department the authority to exempt an on-site cleanup action from a specific permit requirement for an action conducted entirely on-site. However, the procedural and substantive requirements of the permit process must still be observed.

This action qualifies for an exemption for the Air Quality and Waste Management permits required for this action.

APPENDIX B

COMMENTS AND RESPONSES TO INTERIM ACTION MEMORANDUM ADDENDUM

RESPONSE SUMMARY

This response summary will respond to public comments received on the draft IAM Addendum for the BN Mission Wye site. The IAM Addendum reevaluates alternatives from the original IAM and selects an interim response action for the site. The basis for the response action is described in the IAM and this Addendum. Documentation for this decision is also contained in the administrative record.

DEQ released the draft IAM Addendum at a public meeting in Livingston on December 7, 1999. A public comment period was held from December 7, 1999 through January 7, 2000 to accept public comments on the draft IAM Addendum and draft work plan. The public meeting and public comment period was advertised in the Livingston Enterprise and Great Falls Tribune newspapers. One set of written comments was received from BNSF. This response summary will respond to these comments.

For purposes of responding to written comments, the individual comment is identified followed by DEQ's response to the comment. Based on these comments, DEQ will modify the IAM Addendum accordingly and request BNSF's contractor to modify the work plan to reflect DEQ's responses to comments.

NOTE: Due to additions and/or revisions of the Addendum, page numbers on text and tables may appear differently than those on the draft Addendum.

Response to Comments from Burlington Northern and Santa Fe Railway Company

Comment No. 1: General Comment

The IAMA should have a discussion of the permit requirements that are being waived pursuant to Mont. Code Ann. § 75-10-721 (i.e. TSD permit waiver, MPDES permit waiver, Air Quality permit waiver), in addition to the brief discussion contained in the Identification and Description of Legal Requirements.

Response No. 1:

For clarification, the IAM Addendum now specifically discusses the waiver of permit requirements.

Comment No. 2: Page 3, Declaration, 2nd Paragraph, should be amended to read:

"The Department finds that the selected interim action will be consistent with applicable or ~~well suited~~ relevant state ~~and~~ or federal environmental requirements, criteria or limitations (ERCLs), considers present and reasonably anticipated future uses, giving due consideration to institutional controls, is protective of public health, safety, and welfare and the environment, utilizes permanent solutions, utilizes alternative treatment technologies or resource recovery technologies to the maximum extent practicable, and is cost effective."

Response No. 2:

When CECRA § 75-10-721 was amended during the 1995 legislative session, one of the revisions pertained to the development and selection of ERCLs. *See* Chapter 584, Laws of Montana, 1995. However, Section 15 of Chapter 584 states that the 1995 revisions and amendments do not apply to civil actions commenced or begun prior to the effective date of the 1995 act [May 1, 1995] or to claims based on those actions.

The complaint in State of Montana v. Burlington Northern, Inc., Burlington Northern Railroad Company and Glacier Park Company CV 88-141-H-CCL was filed December 27, 1988 and pertains to the Burlington Northern Livingston Railyard Site, Mission Wye site and other Burlington Northern Facilities. Therefore, these ERCLs comply with CECRA as amended in 1993, rather than CECRA as amended by Chapter 584, Laws of Montana, 1995. The 1997 and 1999 Montana legislatures did not alter the role of ERCLs. Therefore, the requested change to the ERCLs component was not made.

Insertion of modifications made by the 1999 legislature is more problematic. The 1999 changes modified those provisions which do not apply to this site due to the savings clause. The modifications involve institutional controls. DEQ will leave the language in the IAM Addendum

as is but will consider the use of institutional controls for temporary prohibition of use of groundwater while natural attenuation is monitored and evaluated.

A footnote has been added to the introductory portion of the ERCLs.

Comment No. 3: Page 7, **I. Introduction and Public Participation**

The document should include some discussion of the publication of notice for the public meeting on December 7, 1999. The reason for this is to memorialize in the document the steps that were taken to provide public notice.

Response No. 3:

DEQ will revise the third paragraph on page 7 to read: " DEQ presented the draft IAM Addendum and draft work plan to the public on December 7, 1999 and held a public meeting on that date. DEQ advertised the public meeting and comment period in the Livingston Enterprise and Great Falls Tribune. A 30-day comment period was held from December 7, 1999 through January 7, 2000 to accept public comments on the draft IAM Addendum and draft work plan. DEQ has responded to public comments received in Appendix B attached to this document and has modified activities described and detailed in the work plan accordingly."

Comment No. 4: Page 8, **II. Summary of Previous Actions Under Interim Action Memorandum**; 1st Paragraph, should be amended to read:

"Primary contaminants detected in ~~waste streams,~~ soil and groundwater are tetrachloroethene (PCE), trichloroethene (TCE) and total petroleum hydrocarbons (TPH). ~~Contaminated soil contains PCE, TCE, and TPH.~~ Asphalt-like substance (ALS) contains TCE and TPH " ~~Based on analytical reports, DEQ has identified the majority of soil and all of the ALS as hazardous waste upon excavation.~~

Rationale: As to the first the deletion of the term "waste streams" should be made as it is vague, and soil, groundwater, and ALS are specifically discussed. As to the second sentence, it should be deleted because it is duplicative of the first sentence. As to the deletion of the last sentence, it is the generator who makes a hazardous waste classification. Until specific TCLP data is obtained it is premature to determine whether the soil or ALS is hazardous. As such, BNSF disputes DEQ's determination that a majority of soil and all of the ALS as hazardous upon excavation.

Response No. 4:

DEQ disagrees with the first deletion since the site also contains wastes such as rocks and debris. DEQ will delete the word "streams" in the first sentence and retain the word "waste". DEQ agrees the second sentence is duplicative and will delete it from this paragraph. DEQ has revised the last sentence to read: " Based on analytical reports, DEQ has identifed the majority of soil and all of the ALS as hazardous waste upon excavation." All ALS failed TCLP and is therefore

hazardous waste upon excavation. BNSF is correct that it is the generator's responsibility to make a hazardous waste determination (and with it, the attendant responsibility). However, it is DEQ's statutory obligation to determine compliance with ERCLs.

Comment No. 5: Page 8, **II. Summary of Previous Actions Under Interim Action Memorandum**; 3rd Paragraph, the following sentence should be added to the end of this paragraph:

"BNSF has subsequently complied with the proper certification and notification requirements."

Response No. 5:

DEQ will make the requested change.

Comment No. 6: Page 12, "Contaminated Soil," Second Sentence should be deleted.

~~"Soil samples will be obtained to demonstrate soil remaining at the bottom of the excavations meet on-site remediation goals.~~"

This sentence should be replaced with a sentence describing, as in the workplans, that a determination of the bottom of the excavations will be made by looking for visual indications that the soil may need to be sampled.

Response No. 6:

Except for general cleanup of surface soil from cleanup activities, seep area soil mixed with ALS is the only remaining confined area of soil that will be removed and treated. Therefore, the second sentence will be deleted and soil sampling will be described in Seep Area Soil Mixed with ALS (next comment)."

Comment No. 7: Page 12-13, "Seep Area Soil Mixed With ALS," should be amended to read:

Seep area soil contains discrete blobs of ALS or clay waste up to three feet in diameter. Discrete blobs of ALS or clay waste will be removed from soil, placed with ALS waste and shipped to a hazardous waste facility. If a visual inspection indicates it is necessary, soil beneath the excavated seep area soil will be sampled to ~~determine compliance with~~ compare to remediation goals. After ALS or clay-waste has been removed from the seep area soil, ~~the soil will be excavated and placed in SVE treatment units~~ the soil will be neutralized, excavated and processed. If the soil passes TCLP, it will be sent to the Landfill, if the soil fails TCLP it will be placed in the SVE system for treatment. SVE will treat soil to non-hazardous levels and LDR levels before it is shipped to the High Plains Sanitary Landfill ~~in~~ near Great Falls.

Rationale: This more accurately reflects the process undertaken for the soil, (i.e. soil can be shipped directly to the High Plains Sanitary Landfill if it passes TCLP and is not a hazardous

waste). This will make the text in this section consistent with the text on Page 11, No. 4; Table 1 and the Workplan.

Response No. 7:

Soil beneath seep area soil needs to be sampled to determine if soil treatment using SVE, as discussed in the original work plan, is necessary. Therefore, the 3rd sentence in this paragraph will be rewritten to read: "Soil beneath the excavated seep area soil will be sampled to determine if it is necessary or cost-effective to remove residual contamination by installing an SVE system in this area."

DEQ will make the recommended changes to the 4th and 5th sentence with the addition of "If the soil passes TCLP upon excavation, it will be sent to the landfill, if the soil fails TCLP upon excavation it will be placed in the SVE system for treatment."

Comment No. 8: Page 15, Table 1, "3) Seep area soil mixed with ALS" should be amended to read: "Excavate and place discrete areas of ALS with other ALS material~~; perform SVE treatment on soil~~. Discrete areas of ALS will be shipped to a hazardous waste facility. Untreated soil that passes TCLP will be disposed of at the High Plains Sanitary Landfill. Treated soil must pass TCLP and LDRs before it is disposed of at the High Plains Sanitary Landfill."

Rationale: The discussion under the "Treatment or Disposal Option" for "Seep area soil mixed with ALS," should be clarified to reflect that depending on TCLP data the soil from the seep area may not require SVE as stated. This change will make Table 1 consistent with the text in the remainder of the Interim Action Memorandum Addendum and the Workplan.

Response No. 8:

DEQ will make the recommended changes to the 1st sentence in this paragraph.

Comment No. 9: Page 16, Table 2.

There is no difference between the Treatment or Disposal Option for the "Greater than 2" rocks separated from soil" and the "Greater than 2" rocks separated from ALS." These sections can be combined.

Response No. 9: DEQ will make the requested change.

Comment No. 10: Page 17, Table 3.

In the "Soil and 1" to 2" rocks"" portion in the "Waste Stream" column, soil and rocks should be separated since rocks require analysis for TPH and the soils do not require this analysis. Sampling Frequency for this row should be 1 grab sample / 200 tons and the constituents should be TCLP VOCs, TCLP metals, Total VOCs and TPH.

Response No. 10:

DEQ will make the recommended changes to Table 3.

Comment No. 11: Page 17, Table 3.

To be consistent with the text in the IAMA, the sampling frequency for "TD spent carbon" (under Waste Stream column), should be 1 grab sample/ ton and the Constituents Sampled should be TCLP VOCs and TCLP metals. Non-hazardous carbon will be sent to the landfill and hazardous carbon will be sent for incineration. A recent sample collected and analyzed for TCLP VOCs indicates that the carbon is non-hazardous. A copy of the results is attached.

Response No. 11:

Preliminary sample results show TD spent carbon may be non-hazardous. DEQ will make the recommended changes in Table 3. Also, under the "Sample Frequency" column, the text will be changed to read: "1 grab sample / ton." Under the "Constituents Sampled" column for TD spent carbon, "TCLP VOCs and TCLP metals" will be added.

Comment No. 12: Page 17, Table 3.

Under the "Constituents Sampled" column for the "Greater than 2" rocks," the text should read "Total VOCs and TPH in Table 4"

Response No. 12:

Under the "Constituents Sampled" column for the "Greater than 2" rocks, DEQ will modify the text to read: "Total VOCs on Table 4 and TPH."

Comment No. 13: Page 18, Table 4, 4th column, heading should be amended to read:

"~~Soil~~ 1995 LDR (mg/kg)" The 7th column heading should be amended to read "Soil and Rock Final Remediation Goal (mg/kg). The trans-1,2-dichloroethene "Soil and Rock Final Remediation Goal" in the 7th column should be 30 mg/kg as stated in the Workplan. 5 mg/kg is incorrect.

Response No. 13:

Soil will be deleted from the 4th column on Table 4. Rock will be added to the 7th column. The trans-1,2-dichloroethene level in the 7th column will remain at 5 mg/kg because it is the more protective level for groundwater based on modeling (soil calculated remediation goal).

Comment No. 14: Appendix A, "Identification and Description of Legal Requirements," Introduction, 1st Paragraph, Last sentence should read as follows:

"Additionally, the Montana Department of Environmental Quality (DEQ) 'shall require cleanup consistent with applicable state or federal environmental requirements, criteria or limitations' and '~~shall~~ may consider ~~and may require cleanup consistent with~~ substantive state or federal environmental requirements, criteria, or limitations that are ~~well suited~~ relevant to the site conditions.' § 75-10-721(2)(a) and (b), MCA."

Response No. 14: DEQ disagrees with the comment. See response to comment 2.

Comment No. 15: Appendix A, "Identification and Description of Legal Requirements," Introduction, Paragraphs 2 through 8.

This discussion is out of date and not found in Montana law. Therefore the section should be rewritten to reflect the provisions of Montana law.

In addition, the use of the term "well suited" should be changed to "relevant" as provided for under Mont. Code Ann. § 75-10-721(2)(b).

Response No. 15: DEQ disagrees with the comment. See response to comment 2.

Comment No. 16: Appendix A, "Identification and Description of Legal Requirements," **Contaminant and Action Specific Requirements**, Section I, Water Quality

As noted in the IAMA (Page 13) and the Workplan, part of the remediation will consist of rock washing. The "wash water will be contained, tested and treated with carbon filters, if necessary to remove contamination. Wash water treated to non-detection levels for VOCs will be disposed of in the spray irrigation system located down gradient from the site." As noted in the Identification and Description of Legal Requirements, "All water used in treatment processes, such as water used for decontamination, will be treated and discharged on-site in accordance with an approved MPDES permit." However the General Discharge Permit dated September 8, 1994 expired on March 15, 1999. Does DEQ intend to require a new permit, or will the MPDES requirement be waived pursuant to Mont. Code Ann. § 75-10-721 provided the provisions of the General Discharge Permit dated September 8, 1994 for the Mission Wye site are followed?

Response No. 16: Since treated decontamination water will be discharged off-site, DEQ will require decontamination water be treated to effluent limits in a renewed MGWPCS General Permit No. 1003. All water used in the interium action must be treated pursuant to the permit.

Comment No. 17: Appendix A, "Identification and Description of Legal Requirements," **Contaminant and Action Specific Requirements**, Section I, Water Quality, A. Groundwater, 2. Montana Groundwater Pollution Control System

In the table the standard for Chlorobenzene under WQB-7(μg/L) is incorrect. Instead of 20.0, it should be 100.0.

Response No. 17: DEQ agrees with this comment. The change has been made.

Comment No. 18: Appendix A, "Identification and Description of Legal Requirements,"**Contaminant and Action Specific Requirements**, Section II, Waste Management, Page 10 and 11.

There should be a discussion or clarification as to the differences between "No. 4 RCRA Land Disposal Restrictions" and "No. 5 LDR Treatment Levels for Hazardous Soil" (see Comment No. 20, below, as to heading of No. 5).

Response No. 18: In response to this comment, this section now references the Universal Treatment Standards specified in 40 CFR 268.48.

Comment No. 19: Appendix A, "Identification and Description of Legal Requirements," **Contaminant and Action Specific Requirements**, Section II, Waste Management, Page 9, No. 4 RCRA Land Disposal Restrictions, First Sentence should read:

"Since the wastes to be treated ~~are~~ maybe [sic] characteristic wastes, the RCRA Land Disposal Restrictions (LDRs) treatment levels set forth in ~~40 CFR Part 268~~ ARM 17.54.150 are applicable requirements including underlying hazardous constituents."

Response No. 19: The first sentence has been revised to read, "Since the majority of the wastes to be treated are characteristic wastes . . ." Regarding the second change, in accordance with CECRA § 75-10-721 and in accordance with the NCP, the IAM Addendum lists both federal and state ERCLs. However, because the state regulations incorporate the federal regulations by reference, for the ease of the reader the state regulations have been listed in footnote no. 2 rather than in the text.

Comment No. 20: Appendix A, "Identification and Description of Legal Requirements," **Contaminant and Action Specific Requirements**, Section II, Waste Management, Page 10, No. 5.

The Section heading should be amended as follows:

"5. Alternative LDR Treatment ~~Levels~~ Standards for ~~Hazardous~~ Contaminated Soil"

Rationale: See 40 CFR 268.49.

Response No. 20: DEQ will make the requested change.

Comment No. 21: Appendix A, "Identification and Description of Legal Requirements," **Contaminant and Action Specific Requirements**, Section II, Waste Management, Page 10, No. 5, First Paragraph, Last 3 Sentences.

These sentences seem to conflict with Table 4 of the IAMA. If DEQ wants BNSF to meet the standards of 40 CFR 268.40 for soils that go back on site they should so state, and provide the authority. The documents (Work Plan, IAMA, Tables, and Identification and Description of Legal Requirements) should be consistent.

Response No 21: The cited language in the ERCLs has been altered to clarify LDR requirements. The 60 mm or smaller decontaminated rocks fall within the regulatory definition of soil. As such, the rocks need to comply with 40 CFR 268.49. However, in most cases, the remediation goals for the contaminates of concern will be more stringent than LDR requirements

Comment No. 22: Appendix A, "Identification and Description of Legal Requirements," **Contaminant and Action Specific Requirements**, Section II, Waste Management, Page 11, No. 7 Substantive Permit Requirements.

The Identification and Description of Legal Requirements provides "40 CFR Part 270 set forth the hazardous waste permit program. The substantive requirements in 40 CFR Part 270, Subpart C (permit conditions), including the requirement to properly operate and maintain all facilities and systems of treatment and control are applicable requirements."

In order to continue to treat the characteristic hazardous waste on-site before shipping it off site for disposal, it will be necessary for the State of Montana to expressly waive, pursuant to Mont. Code Ann. § 75-10-721, the requirement that BNSF obtain a Treatment, Storage, and Disposal (TSD) permit for any treatment and storage. If such a waiver is not granted, then the activities contemplated by the Interim Action Memorandum Addendum will be significantly delayed until the TSD permit process is completed.

Response No. 22: For clarification, the ERCLs again list those permits waived under CECRA § 75-10-721. See also Response to Comment 1.

APPENDIX C

MGWPCS GENERAL PERMIT NO. 1003

Montana Department of
ENVIRONMENTAL QUALITY

Marc Racicot, Governor

P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • E-mail: www.deq.state.mt.us

January 31, 2000

Burlington Northern Railroad
9401 Indian Creek Parkway, 14th floor
Shawnee Mission, KS 66210-2007

RE: Authorization MGWPCS-G1003 to Discharge Under the "General Permit To Discharge Treated Waste Water From Park County, T1S, R10E, Section 35

The department has reviewed Burlington Northern Railroad's application to discharge wastewater and has determined your discharge qualifies for permitting under the "General Permit To Discharge Treated Wastewater From Ground Water Remediation Or Dewatering", Under The Montana Ground Water Pollution Control System Permit, a copy of which is attached.

Therefore, authorization is granted to discharge at the above-referenced location, under the provisions of the "General Discharge Permit.". The General Discharge Permit is valid only when accompanied by this authorization letter.

Please take special note of the effluent limitations, self-monitoring, and reporting requirements attached to this authorization letter. Any violation of these requirements or any other provision of the General Permit is subject to enforcement action by this Department pursuant to the Montana Water Quality Act.

On all correspondence and reporting forms, please reference your new MGWPCS Permit Number, (MGWPCS-1003).

Your authorization to discharge under the "General Discharge Permit" shall expire on January 31, 2005.

If you have any questions or comments feel free to contact the Permits Section of this office at 444-3040.

Mike Pasichnyk, Acting Section Head
Water Protection Bureau
Permitting and Compliance Division
Department of Environmental Quality

Attachment: Effluent limitations, self-monitoring and reporting requirements

MGWPCS GENERAL PERMIT NO. 1003

RE: Effluent limitations, self-monitoring, and reporting requirements for MGWPCS General Permit No. 1003 issued to Burlington Northern Railroad for the Mission Wye Site located at T1S, R10E, Section 35.

These requirements are modified from "Application For General Permit To Discharge Treated Waste Water From Groundwater Remediation Or Dewatering Under The Montana Ground Water Pollution Control System" Prepared by Remediation Technologies, Inc, Fort Collins, CO dated June 1994.

This permit will allow discharge of treated water from remedial cleanup activities, including, but not limited to decontamination water and other water generated during remediation of the Mission Wye Site.

Effluent limitations and reporting limits:

Parameter	Reporting Limit	Effluent Limit
1,2 Dichlorobenzene	1.0 µg/l	< 1.0 µg/l
Tetrachloroethene	0.5 µg/l	< 0.5 µg/l
Trichloroethene 0.5 ug l	0.5 µg/l	< 0.5 µg l
Xylene	1.5 µg/l	< 1.5 µg l
Arsenic	3.18 µg/l	1.0 µg l
Cadmium	0.1 µg/l*	32.0 µg l**
Chromium	1.0 µg/l*	408.0 µg/l**
Iron	10.0 µg/l*	326,000.0 µg/l**
Lead	3.18 µg/l*	62.0 µg/l**
Manganese	5.0 µg/l*	72,700.0 µg/l**
Zinc	10.0 µg/l*	5,540.0 µg/l**

* Higher detection levels may be used if it has been demonstrated that the higher detection levels will be less than 10% of the expected level of the sample.

** Effluent limits are above reporting limits and trigger values but the adsorption capacity of the soils has been documented and no ground water impacts will result.

Self-monitoring locations, schedule and Reporting:

The influent wastewater stream and effluent wastewater stream must be sampled before and after complete treatment. Monitoring wells MW-2,5,6 and 7 must be sampled before application, monthly during land application and for three months following application.

The following sampling and reporting schedule must be followed for the waste stream:

Sampling Period	Sampling Frequency
Week one	Daily (six events)
Week two through four	Weekly (three events)
Month two forward	Biweekly (twice per month)

Reporting Frequency

Section B of MGWPCS General Permit No. 1000 is here changed to monthly reporting. Effluent samples that do not meet the effluent limits must be immediately reported by telephone to the Department.

Permit No.: MGWPCS-G1-000

MONTANA DEPARTMENT OF HEALTH
AND
ENVIRONMENTAL SCIENCES

GENERAL PERMIT TO DISCEARGE TREATED WASTE

WATER FROM GROUND WATER REMEDIATION OR DEWATERING

UNDER THE MONTANA GROUND WATER POLLUTION CONTROL SYSTEM

In compliance with Section 75-5-101 et seq., MCA, and ARM 16.20.1022, and ARM 16.20.1317, et seq., applicants with an authorization letter for this "Treated Waste Water From Ground Water Remediation or Dewatering General Permit" are permitted to discharge treated waste water to ground water in accordance with effluent limitations, monitoring requirements and other conditions set forth herein. Discharge may be by injection, infiltration, or land application.

The permit shall become effective on the date of issuance.

A written authorization letter from the Department is required before an applicant is authorized to discharge under the Ground Water Remediation or Dewatering General Discharge Permit.

This permit and the authorization to discharge shall expire at midnight, March 15, 1999.

FOR THE MONTANA DEPARTMENT OF HEALTH
AND ENVIRONMENTAL SCIENCES

John Arrigo, Manager
Ground Water Section
Water Quality Bureau
Environmental Sciences Division

Dated this day of 1993.

A. Treatment Requirements, Effluent Limitations and Self-Monitoring Requirements

The purpose of the General Permit is to accelerate remediation activities and allow for the dewatering of contaminated ground water in a manner which will prevent further contamination and ensure adequate treatment prior to discharge.

During the period specified in the authorization letter the permittee is authorized to discharge treated waste water from ground water remediation or dewatering activities. Treatment of waste water is required prior to discharge. Treatment may include: granular activated carbon adsorption, photodegradation, enhanced volatilization, biodegradation, settling, soil attenuation, evaporation, ion exchange, reverse osmosis or other approved treatments or a combination of these treatments to meet the effluent limitations. Some treatment methods may require additional permits from the Air Quality Bureau of the Department of Health.

The authorized discharge must conform to the following stipulations: 1) In most cases waste water may only be discharged into or above the contaminated aquifer from which it was removed, 2) Treated Waste Water may only be discharged into ground water that has higher concentrations of the parameters of concern, 3) Treated waste water must be discharged in a manner that will not cause an increase in the concentration or extent of ground water contamination, 4) If waste water is treated to below detection limits it may be land applied in areas outside the contaminated aquifer if hydrologic conditions and volumes are such that it is unlikely to impact ground water.

Under this permit the Department may issue authorization letters which authorize short-term exemptions from the water quality standards, or short-term use that exceeds the water quality standards, and the limitations set forth in this permit in accordance with 75-5-308 MCA.

Discharges shall be treated, limited and monitored by the permittee as specified below:

1. Treatment Requirements

Parameter	Treatment Requirement
Applicable WQB Circular 7 Parameters Present in Waste Water	90% removal

2. Effluent Limitations for treated waste water.*

Parameter	Daily Maximum
Applicable WQB Circular 7 Parameters Present in Waste Water	Less than receiving water

* EPA methods as outlined in WQB Circular 7 for the measurement of the parameters of concern must be used.

3. Site-Monitoring Requirements*

Parameter	Frequency
Applicable WQB Circular 7 Parameters Present in Waste Water	Daily for the first week, Weekly for the first month, Monthly for the first year, Quarterly there after
Discharge Volumes	"

* Monitoring requirements may be modified by written request of the permittee and approval by the Department.

Sample Type

Specified in Authorization

4. Monitoring Locations

Samples of waste water taken in compliance with the monitoring requirements specified above shall be taken at the following locations: 1) prior to treatment and 2) nearest accessible point after final treatment but prior to actual discharge to ground water or land application. Soil and/or ground water monitoring may be required, at the Department discretion, in application areas depending on remediation strategies.

B. REPORTING REQUIREMENTS

Self-monitoring reports shall be submitted to the Department as defined in the letter of authorization. At a minimum quarterly submittal of monitoring will be required. Monitoring results obtained during the previous reporting period shall be summarized and reported to the Department, postmarked no later than the 28th day of the month following the completed reporting period. Signed copies of these, and all other reports required herein, shall be submitted to the Department at the following address:

Montana Department of Health & Environmental Sciences
Water Quality Bureau
Cogswell Building, Room A-206
Helena, Montana 59620-0909
Phone: (406) 444-2406

C. DEFINITIONS

1. The "Department" means the Montana Department of Health and Environmental Sciences.

2. "State Waters" means any body of water, irrigation system, or drainage system, either surface or underground; however, this subsection does not apply to irrigation waters where the waters are used up within the irrigation system and the waters are not returned to any other state waters.

3. "Waste Water" is water that is contaminated with any of the parameters listed in WQB Circular 7 above naturally occurring background levels.

4. "Treated Waste Water" is waste water that has received the minimum treatment as provided in this permit: ie, 80% removal of contaminants of concern and less than receiving waters.

5. A "grab sample," for monitoring requirements, is defined as a single "dip and take" sample collected in a manner to make it representative of the location being sampled.

6. "Daily Maximum" is the maximum value allowable in any single sample or instantaneous measurement.

7. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

8. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

D. TEST PROCEDURES

Unless otherwise stated, test procedures for the analysis of pollutants shall conform to regulations published in, or subsequent revisions to, Part 136, Title 40 of the Code of Federal Regulations. Sample collection and preservation shall be in accordance with EPA methods as outlined in WQB-7. (The Department's Treatment and Preservation Guide should be consulted for acceptable sample collection and preservation techniques.)

E. RECORDING OF RESULTS

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

1. Description of sampling site (Township, Range, Section 1/4 Section, and Site Name or street address), date, and time of sampling;

2. The dates the analyses were performed;

3. The person(s) or laboratory who performed the analyses;

4. The analytical techniques or methods used; and

5. The results of all required analyses, and copies of laboratory analytical reports.

F. ADDITIONAL MONITORING BY PERMITTEE

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the monitoring report. Such increased frequency shall also be indicated.

G. RECORDS RETENTION

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years, or longer if requested by the Department.

H. CHANGE IN OPERATION

Operation of the facility must be consistent with the conditions of the permit; any sewerage system, treatment works or disposal system expansions, production increases or process modifications which may result in a change of operation must be reported to the Department. After review of this information, the Department will determine whether submission of a new or modified MGWPCS permit application is necessary.

I. NONCOMPLIANCE NOTIFICATION

If, for any reason, the permittee does not comply with or will be unable to comply with any condition specified in this permit, the permittee shall provide the Department with the following information, immediately by telephone and in writing, within five (5) days of becoming aware of such noncompliance:

1. A description and cause of noncompliance; and

2. The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the problem.

J. FACILITIES OPERATION

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit.

K. ADVERSE IMPACT

The permittee shall take all reasonable steps to minimize any adverse impact to state waters resulting from noncompliance with any discharge limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

L. BYPASSING

Any diversion from or bypass of treatment or control facilities or systems necessary to maintain compliance with the terms and conditions of this permit is prohibited.

If, for any reason, a partial or complete bypass of the wastewater or holding facilities is considered necessary, a request for such bypass shall be submitted to the Department at least sixty (60) days prior to the proposed bypass. If the proposed bypass is judged acceptable by the Department, the bypass will be allowed subject to limitations imposed by the Department.

If, after review and consideration, the proposed bypass is determined to be unacceptable by the Department, or if the limitations imposed on an approved bypass are violated, such bypass shall be considered a violation of this permit; and the fact that application was made, or that a partial bypass was approved, shall not be defense to any action brought thereunder.

M. REMOVED SUBSTANCES

Solids, sludges, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering state waters.

N. TRANSFER OF OWNERSHIP OR CONTROL

In the event of any change in control or ownership of the source authorized by this permit, the permittee shall notify the succeeding owner or controller of the existence of this permit by letter, a copy of which shall be forwarded to the Department.

O. AVAILABILITY OF REPORTS

Except for data determined to be confidential under Section 75-5-105, MCA, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. Monitoring data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 75-5-633, MCA.

P. PERMIT MODIFICATION

After notice and opportunity for a hearing, this MGWPCS permit may be modified, suspended, or revoked in whole or in part during its term under provisions of Sections 75-5-403 and 75-5-404, MCA, for cause, including, but not limited to, any of the following:

1. Violation of any conditions of this permit;

2. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

3. A change in any condition or a violation of state water quality standards or degradation of high quality state waters caused by this discharge that requires either a temporary or permanent reduction or elimination of the authorized discharge; or

4. A failure or refusal by the permittee to comply with the requirements of Section 75-5-602, MCA.

Q. ACCESS

The permittee shall allow personnel of the Department, and/or their authorized representatives, upon the presentation of credentials:

1. To enter upon the permittee's premises where source is located or in which any records are kept; and

2. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

R. PROPERTY RIGHTS

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

S. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

T. REAPPLICATION

If the permittee desires to continue to discharge beyond the expiration date of this permit, he shall reapply, in writing, to the Department at least one hundred-eighty (180) days prior to the expiration date of this permit.

U. OTHER REQUIREMENTS

1. All areas disturbed by the treatment facility must be reclaimed to prior stability and utility.

2. No discharge of treated waters will be permitted in areas where ground water quality is unknown.

3. In areas of proposed discharge where insufficient ground water quality data exists to identify base line contamination, new data must be obtained.

4. The discharge area must be inspected weekly to confirm that surface runoff is not taking place and the discharge system is operating as proposed.

5. Ground water flow and aquifer characteristics must be documented and reported prior to discharge for review by the Department.